ROLLING PIN WITH REMOVABLE GUIDE DISKS

CROSS-REFERENCE TO RELATED APPLICATIONS, IF ANY

This application claims the benefit under 35 U.S.C. §119 (e) of co-pending provisional application Serial No. 60/486,806, filed 14 July, 2003. Application Serial No. 60/486,806 is hereby incorporated by reference.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not applicable.

REFERENCE TO A MICROFICHE APPENDIX, IF ANY

Not applicable.

BACKGROUND OF THE INVENTION

1. Field of the Invention.

The present invention relates to a device for rolling out dough of uniform thickness. More particularly, the present invention relates to a device that attaches to a conventional rolling pin. Most particularly, the present invention relates to a system of disks and clips that attach to a rolling pin to allow the rolling out of dough of uniform thickness.

2. Background Information.

In the preparation of baked or fried goods, bakers mix flour with a liquid such as milk, water, or the like and other ingredients to form a plastic mass or dough in the preparation of bread, pastries, doughnuts and the like. After the dough is prepared, a rolling pin having a cylindrical body with a

handle at each end is often used to roll out the batch of dough until the dough is approximately at a desired thickness. Often, the batch of dough is rolled into a generally circular mass having a diameter greater than the length of the cylindrical body of the rolling pin. This is accomplished by placing the rolling pin at the center of the batch and moving it radially outwardly, while applying a downward pressure on the handles at opposite ends to spread the dough to a desired thickness.

With this type of rolling pin, it is difficult to obtain a constant dough thickness, particularly from batch to batch of the dough, because the rolled out batch of dough covers the base material on which it is being rolled so that the thickness may be judged accurately only at the periphery of the mass. Also, if more pressure is applied to one handle than the other, or if more pressure is applied at the center of the mass rather than at the periphery, the thickness of the mass of dough will be non-uniform.

Some examples of inventions involving rolling pins and similar devices for which patents have been granted include the following.

Heissenbuttel, in U.S. Patent No. 39,916, describes a rolling-pin A, which consists of a cylinder a, with flanges b, one at each end, and a handle, c. The flanges b of the finishing-pin ought to be made of metal and screwed to the ends of the wooden cylinder a, and the handle is placed loosely through the center of the cylinder, so that the latter can turn freely on the same, or the handle may be firmly secured to the cylinder, and, in this case, it must he permitted to turn in the hands as the cylinder rolls along.

In U.S. Patent No. 353,177, Taylor discloses a pair of wheeled supports, each of which attach to one handle of a rolling pin. The wheeled supports elevate the main roller A above the surface on which the wheels K contact. The clearance beneath the main roller is adjusted by turning a screw N having a head M on each wheeled support.

Weber, in U.S. Patent No. 359,480, describes a roller-knife that has a metallic shaft on which slips a series of circular blades with interspersed spacers to hold the blades apart a selected distance. Each end of the shaft has a handle for drawing the roller-knife across a sheet of dough to cut the dough into strips.

In U.S. Patent No. 534,460 Wolff et al. disclose a rolling pin having spacing collars D at opposite ends of its cylindrical body A. Spindles C extend beyond the collars and are provided at their outer extremities with threaded tenons F. Gage wheels B are fitted loosely on the spindles C, to bear against the spacing collars D, and having a greater diameter than the cylindrical body, with thimbles E fitted loosely on the spindles C to bear against the gage wheels B and serving as the handles for the manipulation of the rolling pin. Nuts F are fitted on the threaded tenons to hold the thimbles in place. In one embodiment, the gage wheels B are made integral with the cylindrical body A and separated therefrom by reduced portions D, which are equivalent to the spacing collars D. The gage wheels B are grooved circumferentially to receive the tires G, which are employed to elevate the cylindrical body A of the rolling pin the desired distance above the rolling board to gage the thickness of the sheet of dough to be rolled uniformly by the pin.

U.S. Patent No. 550,337 by Wolff et al. describes a similar rolling pin having graduated journals D-E between the sleeved handle C and the end of the cylindrical body A, in combination with a gage wheel or ring G, which is adapted to fit any one of the graduations of the journal D-E and to sustain the pin body A at different distances from the rolling surface.

In U.S. Patent No. 1,534,907, Broecker discloses a rolling pin fitted on the ends with discs 3 of larger diameter than the body 1 of the pin. The discs 3 are removably held in position by screws 5 that protrude from the end of the body. The discs 3 are biased against the screw heads 5 by internal

springs 6 to prevent the discs from falling off during use. Note, in particular, Figures 1, 3 and 5, showing the discs 3 held in place by the screws 5 and internal springs 6.

Lewis, in U.S. Patent No. 2,339,492, describes a laminating roller 28 having a cylindrical drum 34 mounted on a hollow axle 38. The end sleeves 36 are each provided with an annular flange 40, which are spaced apart from the ends of the drum and operatively engage the groove 24 to maintain the roller in proper operative relation relative to the bed. The annular flanges 40 are a unitary part of the hollow axle.

In U.S. Patent No. 2,920,389, Nurmi discloses a device for cutting dough into strips. The device includes an axle 15 upon which a plurality of cutting disks 16 are rotatably supported on the axle. The disks are mounted on the axle such that moving the device over a table, all the disks will cut and divide the sheet of dough into strips, regardless of variation in thickness of the dough or unevenness in the surface of the table.

Kuzyk, in U.S. Patent No. 3,994,652, describes a combined rolling pin and dough cutter. It is made up mainly of a central shaft provided with a handle at each end and a series of abutting cylindrical rollers, all of the same diameter, which rotate freely upon the central shaft to function as a rolling pin. To perform as a dough cutter, a series of circular cutting discs are inserted between the rollers. These discs are of a larger diameter than the rollers, so that their cutting edge extends beyond said rollers. One handle of the shaft is permanently fixed to the shaft, while the other handle unscrews from the shaft to allow the insertion of the rollers and discs. One of the handles of the shaft is bored with a longitudinal hole into which is inserted a center pin, which is used for cutting circular sections of dough used in pie making. This is accomplished by inserting the center pin into holes provided in the central shaft, inserting one of the cutting discs a predetermined distance from the center pin, and

rotating the cutting disc in a circle with the center pin as its center.

In U.S. Patent No. 4,045,850, Brandes discloses a pin for rolling dough to variable thicknesses, the variability being under immediate control by the baker. The pin carries a rotatable gage permanently mounted on the roller in such a way that the baker can almost instantly vary the thickness of the dough that he is about to roll without substituting elements on the rolling pin and/or altering the relationship of the physical elements on the rotatable gage that make the variable thickness of the dough possible.

Abrams, in U.S. Patent No. 4,435,145, describes an apparatus for rolling plastic material such as bread dough or cookie dough, so that the material has a substantially constant thickness throughout the entire mass. The apparatus includes an elongated cylindrical body having an outwardly extending axial handle at each end, and each of the handles has a selected gauge wheel removably mounted at the outer end thereof.

In U.S. Patent No. 4,521,174, Kornhauser discloses a dough manipulator adapted for manually controlling the thickness of dough, which comprises a roller with handles and means for maintaining the roller at a predetermined height above a surface, wherein the means for maintaining the height of the roller is placed at a predetermined distance from the ends of the roller. Height maintaining means include spacer rings positioned on the roller or spacer strips positioned on the surface. The manipulator is used in conjunction with a surface which is substantially flat.

Conkey in U.S. Patent No. 4,718,769 describes a dough preparation apparatus of the "dough docker" type, consisting of a shaft having a central region upon which a plurality of individual rollers are mounted in side-by-side relationship defining a roller stack. Radially extending teeth are defined upon each roller, and a gauging roller is mounted at each end of the stack of a diameter slightly

greater than that of the stack rollers. Tubular sleeves are rotatably mounted upon the shaft end regions defining handles, and bolts threaded into the shaft ends maintain the assembly of components.

While the present invention is amenable to various modifications and alternative forms, specifics thereof have been shown by way of example in the drawings and will be described in detail. It should be understood, however, that the intention is not necessarily to limit the invention to the particular embodiments described. On the contrary, the intention is to cover all modifications, equivalents, and alternatives falling within the spirit and scope of the invention, as defined by the appended claims.

SUMMARY OF THE INVENTION

The invention is directed to a modification of a rolling pin that allows the user to roll out a sheet of dough or crust having a completely uniform thickness. Any conventional rolling pin can be modified to accept the present invention. A standard rolling pin has a cylindrical pin with an axle extending along the cylindrical axis of the pin. Each end of the axle has a handle that the user grasps to use the rolling pin on dough or crust material.

The present invention is a clip, spacer and disk system for a rolling pin. The system includes a pair of clip and spacer assemblies, each assembly mounted to the pin central axle between a pin handle and an end of the cylindrical pin. The assembly includes a planar clip member adjacent the pin handle and a planar spacer member adjacent the cylindrical pin. Each clip and spacer assembly is smaller in diameter than the cylindrical rolling pin and larger in diameter than the pin handle. Each planar clip member includes at least one tab portion coplanar therewith. The system also includes pairs of planar guide disk members, each guide disk member having a diameter larger than the

cylindrical pin. Each guide disk member has a central slot, allowing passage of the clip member with at least one tab portion there through, and positions the guide disk member about the spacer member.

Thus, inserting a pin handle through a guide disk member's central slot allows the clip member with at least one tab portion to pass there through. The guide disk member's central slot thereby encircles the spacer member. Rotational movement between the guide disk member and clip member produces misalignment of the clip member's at least one tab portion and the guide disk member's central slot, thereby locking the guide disk member in place about the spacer member. The guide disk members elevate the cylindrical pin a selected distance above a support surface. Several pairs of guide disk members are provided in various diameters, and pairs of disks can be exchanged on the rolling pin to provide different thicknesses of rolled out dough, without removing the handles of the rolling pin.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a top plan view of one embodiment of the clip and spacer assembly of the present invention.

Figure 2 is a sectional view along line 2-2' of Figure 1 of the clip and spacer assembly of the present invention.

Figure 3 is a top plan view of one embodiment of the guide disk member of the present invention.

Figure 4 is a top plan view of the guide disk member of Figure 3 engaging the clip and spacer assembly of Figure 1 of the present invention.

Figure 5 is a cross sectional view along line 5-5' of Figure 4 of one embodiment of the guide disk member engaging a clip and spacer assembly of the present invention.

Figure 6 is a top plan view of another embodiment of the clip and spacer assembly of the present invention.

Figure 7 is a top plan view of another embodiment of the guide disk member of the present invention.

Figure 8 is a top plan view of the guide disk member of Figure 7 engaging the clip and spacer assembly of Figure 6 of the present invention.

Figure 9 is a cross sectional view along line 9-9' of Figure 8 of one embodiment of the guide disk member engaging a clip and spacer assembly of the present invention.

Figure 10 is a top plan view of yet another embodiment of the clip and spacer assembly of the present invention.

Figure 11 is a top plan view of the guide disk member of Figure 7 engaging the clip and spacer assembly of Figure 10 of the present invention.

Figure 12 is a top plan view of yet another embodiment of the clip and spacer assembly of the present invention.

Figure 13 is a sectional view along line 13-13' of Figure 12 of the clip and spacer assembly of the present invention.

Figure 14 is a top plan view of yet another embodiment of the guide disk member of the present invention.

Figure 15 is a top plan view of the guide disk member of Figure 14 engaging the clip and spacer assembly of Figure 12 of the present invention.

Figure 16 is a top plan view of pairs of different sized guide disk members with a common central slot of the present invention.

Figure 17 is a sectional view of one end of a cylindrical rolling pin member fitted with a spacer, clip and disk system of the present invention.

Figure 18 is a perspective view of a cylindrical rolling pin member fitted with the spacer, clip and disk system of the present invention.

DESCRIPTION OF THE EMBODIMENTS

Nomenclature:

10	Clip, Spacer and Disk System
20	Clip and Spacer Assembly
25	Central Aperture in Clip Member and Spacer Member
30	Clip Member
35	Tab Portion of Clip Member
40	Spacer Member
50	Guide Disk Member
60	Central Slot in Guide Disk Member
100	Rolling Pin with Clip, Spacer and Disk System
110	Cylindrical Rolling Pin Member
120	Central Axle of Rolling Pin
130	Handle Member of Rolling Pin

Construction:

The invention is directed to the modification of a rolling pin that allows the user to roll out a sheet of dough or crust having a completely uniform thickness. Any conventional rolling pin can be modified to accept the present invention. A standard rolling pin has a cylindrical pin with an axle extending along the cylindrical axis of the pin. Each end of the axle has a handle that the user grasps to use the rolling pin on dough or crust material.

The present invention is a clip, spacer and disk system for a rolling pin. The system includes a pair of clip and spacer assemblies, each assembly mounted to the pin central axle between a pin handle and an end of the cylindrical pin. The assembly includes a planar clip member adjacent the pin handle and a planar spacer member adjacent the cylindrical pin. Each clip and spacer assembly is smaller in diameter than the cylindrical rolling pin and larger in diameter than the pin handle. Each planar clip member includes at least one tab portion coplanar therewith. The system also includes pairs of planar guide disk members, each guide disk member having a diameter larger than the cylindrical pin. Each guide disk member has a central slot, allowing passage of the clip member with at least one tab portion there through, and positions the guide disk member about the spacer member.

Thus, inserting a pin handle through a guide disk member's central slot allows the clip member with at least one tab portion to pass there through. The guide disk member's central slot thereby encircles the spacer member. Rotational movement between the guide disk member and clip member produces misalignment of the clip member's at least one tab portion and the guide disk member's central slot, thereby locking the guide disk member in place about the spacer member. The guide disk members elevate the cylindrical pin a selected distance above a support surface. Several pairs of guide disk members are provided in various diameters, and pairs of disks can be exchanged on the

rolling pin to provide different thicknesses of rolled out dough, without removing the handles of the rolling pin.

Referring to Figures 1- 5, several views of one embodiment of the clip, spacer and disk system **10** are shown. Figure 1 shows a top plan view of the clip and spacer assembly **20**, which includes a central aperture **25** for attachment of the assembly **20** to the axle **120** of a rolling pin **110**. Figure 1 shows the clip member **30** with a single tab portion **35** extending coplanar therefrom. Figure 2 shows a cross sectional view of the clip and spacer assembly **20**, along line 2-2' of Figure 1, which includes a central aperture **25** for attaching the clip and spacer assembly **20** to the axle **120** of a rolling pin **110**. Figure 2 shows the spacer member **40** to be the same diameter as the clip member **30**, except for the tab portion **35**, which extends beyond a circumferential edge thereof. Each clip and spacer assembly **20** is attached to the axle **120** of a rolling pin **110**, with the spacer member **40** adjacent the cylindrical pin member **110** and the clip member **30** adjacent the handle member **130**.

Referring now to Figure 3, a guide disk member **50** of one embodiment of the present invention is shown. The guide disk members **50** are circular disks and have a diameter larger than that of the rolling pin member **110**. Each guide disk member **50** includes a central slot **60** that matches the contour of the clip portion **30** of the clip and spacer assembly **20**. A guide disk member **50** slips over one of the rolling pin handles **130** and the clip portion **30** of the clip and spacer assembly **20**. The guide disk member **50** is approximately the same thickness as the thickness of the spacer member **40**, and the guide disk member **50** moves past the clip member's tab portion **35** and is rotated to bring the central slot **60** and clip member's tab portion **35** out of alignment and, thereby, locks the guide disk member **50** in place about the spacer member **20**, as illustrated in Figures 4 and 5. The single tab portion **35** is marginally effective in retaining the guide disk member **50** on the spacer

member **40** when using a rolling pin member **110** fitted with the clip, spacer and disk system **10** of Figures 1-5. In this embodiment of the invention, the clip and spacer assembly **20** is, preferably, of unitary construction and, preferably, secured to the end of the rolling pin member **110**. The guide disk members **50** are provided in various diameters and can be exchanged on the rolling pin member **110** to provide different thicknesses of rolled out dough, without removing the handles members **130** of the rolling pin member **110**.

Referring now to Figures 6-9, several views of another, preferred, embodiment of the clip, spacer and disk system **10** are shown. Figure 6 shows a top plan view of the clip and spacer assembly **20**, which includes a central aperture **25** for attachment of the assembly **20** to the axle **120** of a rolling pin **110**. Figure 6 shows the clip member **30** with two, opposed tab portions **35** extending coplanar therefrom. Again, the spacer member **40** is the same diameter as the clip member **30**, except for the tab portions **35**, which extends beyond a circumferential edge thereof. Each clip and spacer assembly **20** is attached to the axle **120** of a rolling pin **110**, with the spacer member **40** adjacent the cylindrical pin member **110** and the clip member **30** adjacent the handle member **130**.

Referring now to Figure 7, a guide disk member **50** of the preferred embodiment of the present invention is shown. The guide disk members **50** are circular disks and have a diameter larger than that of the rolling pin member **110**. Each guide disk member **50** includes a central slot **60** that matches the contour of the clip portion **30** of the clip and spacer assembly **20**; in this embodiment it includes portions of the central slot **60** that match the tab portions **35** of the clip member **30**. A guide disk member **50** slips over one of the rolling pin handles **130** and the clip portions **30** of the clip and spacer assembly **20**. The guide disk member **50** is approximately the same thickness as the thickness of the spacer member **40**, and the guide disk member **50** moves past the clip member's tab

portions **35** and is rotated to bring the central slot **60** and clip member's tab portions **35** out of alignment and, thereby, locks the guide disk member **50** in place about the spacer member **20**, as illustrated in Figures 8 and 9. The two tab portions **35** are very effective in retaining the guide disk member **50** on the spacer member **40** when using a rolling pin member **110** fitted with the clip, spacer and disk system **10** of Figures 6-9. In the preferred embodiment of the invention, the clip and spacer assembly **20** is, preferably, of unitary construction and, preferably, secured to the end of the rolling pin member **110**. The guide disk members **50** are provided in various diameters (Figure 16) and can be exchanged on the rolling pin member **110** to provide different thicknesses of rolled out dough, without removing the handles members **130** of the rolling pin member **110**.

Referring now to Figures 11 and 12, an alternative embodiment of the clip and spacer assembly **20** is shown, which again includes a central aperture **25** for attachment of the assembly **20** to the axle **120** of a rolling pin **110**. Figure 10 shows the clip member **30** with two, opposed tab portions **35** extending coplanar therefrom. In this embodiment, the clip member **30** is rectangular in shape with the two opposed ends thereof functioning as the two tab portions **35**. Again, the spacer member **40** is circular to accommodate rotational movement of the guide disk member **50** to lock it in place, as illustrated in Figure 11. The guide disk member **50** is the embodiment shown in Figure 7. Each clip and spacer assembly **20** is attached to the axle **120** of a rolling pin **110**, with the spacer member **40** adjacent the cylindrical pin member **110** and the clip member **30** adjacent the handle member **130**. The cross sectional view along line 9-9' of Figure 11, as well as the cross sectional view of Figure 8, is shown in Figure 9. In this embodiment of the invention, the clip and spacer assembly **20** is, preferably, of unitary construction and, preferably, secured to the end of the rolling pin member **110**. The guide disk members **50** are provided in various diameters (Figure 16) and can be exchanged

on the rolling pin member **110** to provide different thicknesses of rolled out dough, without removing the handles members **130** of the rolling pin member **110**.

Referring now to Figures 12-15, several views of another embodiment of the clip, spacer and disk system **10** are shown. Figure 12 shows a top plan view of the clip and spacer assembly **20**, which includes a central aperture **25** for attachment of the assembly **20** to the axle **120** of a rolling pin **110**. Figure 12 again shows a rectangular clip member **30** with opposed tab portions **35** extending coplanar therefrom. Figure 13 shows a cross sectional view of the clip and spacer assembly **20**, along line 13-13' of Figure 12, which includes a central aperture **25** for attaching the clip and spacer assembly **20** to the axle **120** of a rolling pin **110**. Figure 12 shows the spacer member **40** to be non-circular, rectangular in this embodiment. Each clip and spacer assembly **20** is attached to the axle **120** of a rolling pin **110**, with the spacer member **40** adjacent the cylindrical pin member **110** and the clip member **30** adjacent the handle member **130**.

Referring now to Figure 14, a guide disk member **50** of this embodiment of the present invention is shown. The guide disk members **50** are circular disks and have a diameter larger than that of the rolling pin member **110**. Each guide disk member **50** includes a central slot **60** that matches the contour of both the clip portion **30** and the spacer portion **40** of the clip and spacer assembly **20**; in this embodiment it includes portions of the central slot **60** that match the tab portions **35** of the clip member **30**. A guide disk member **50** slips over one of the rolling pin handles **130** and the clip portion **30** of the clip and spacer assembly **20**. The guide disk member **50** is approximately the same thickness as the thickness of the spacer member **40**, and the guide disk member **50** moves past the clip member's tab portions **35** and encloses the spacer member **40**. Because the spacer member **40** is non-circular, the guide disk member **50** cannot rotate relative thereto. In this

embodiment of the invention, the clip and spacer assembly **20** comprises separate elements for the clip member **30** and the spacer member **40**. Preferably, the spacer member **40** is secured to the adjacent end of the rolling pin member **110**, and the clip member **30** is rotated to bring the central slot **60** of the guide disk member **50** and clip member's tab portions **35** out of alignment and, thereby, locks the guide disk member **50** in place about the spacer member **20**, as illustrated in Figure 15. The two tab portions **35** are very effective in retaining the guide disk member **50** on the spacer member **40** when using a rolling pin member **110** fitted with the clip, spacer and disk system **10** of Figures 12-15. Alternatively, with the clip member **30** and the spacer member **40** separate elements, the spacer member **40** may be integrally formed with an end of the cylindrical pin member **110**. This particular configuration of the clip and spacer assembly **20**, with a separate clip member **30** and spacer member **40**, can be applied to any of the embodiment of the invention disclosed above.

Figure 17 shows a cross sectional view of the clip, spacer and disk assembly **10**, secured to one end of a rolling pin member **110**. It is a simple matter to exchange one set of guide disk members **50** for another set of a different diameter (Figure 16) to vary the thickness of the dough being rolled out with the rolling pin member **110**. The present invention has the advantage that the rolling pin handles **130** need not be disconnected to change one guide disk member **50** for another one of different diameter.

The rolling pin with clip spacer and disk system **100** of the present invention is shown in Figure 18. A guide disk member **50** is positioned adjacent each end of the rolling pin member **110** and held in position by the tab portions **35** of each clip member **30**. The rolling pin handles **130** are preferably flat on one side to provide additional clearance between the handles **130** and the support surface to accommodate the user's fingers.

While the invention has been particularly shown and described with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the spirit and scope of the invention.